

Appl. No. 10/014,676
Response dated September 19, 2006
Reply to Office Action of June 19, 2006

Remarks/Arguments

Claims 1-21 are pending and stand rejected on varying grounds under § 103(a).

Claims 1 and 9 have been amended to further clarify the invention and claim 16 has been amended to resolve some informalities. No new matter has been added by any amendments.

In view of the comments below, Applicant respectfully requests that the Examiner reconsider the present application including claims 1-21 and withdraw the rejection of these claims.

Applicant is appreciative of the obvious efforts that have been extended in searching and examining the present application.

a) Claims 1-2 and 6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Olkkonen, et al (US Pat. No.6,842,460 B1) in view of Bahl, et al. (U.S. Publication No. 2003/0054818 B1) In view of Gwon et al. (US Publication No. 2003/0016655 A1).

Claim 1 is in independent form with claim 2 and 6 dependent thereon. Claim 1 has been amended to further clarify the invention.

Olkkonen et al was issued on January 11, 2005 and filed on June 27, 2001. Bahl et al was published on March 20, 2003 and filed on September 17, 2001. Gwon et al was published on January 23, 2003 and filed January 29, 2001. The present invention was filed on December 11, 2001. Thus these references qualify as prior art, if at all, only if the reference qualifies as prior art under 102(e). Section 102(e) recognizes that (1) publications of applications by another under

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section 122(b) that are filed before the invention by applicant as well as (2) patents granted on an application for patent by another filed in the US before the invention by the applicant may preclude granting a patent to applicant. Applicant is investigating whether these respective references were filed prior to the invention by the Applicant and reserves the right to file an appropriate Declaration regarding conception and due diligence, if needed.

Regarding claim 1, the Examiner maintains that "Olkkinen et al. discloses defining a neighborhood cell by transmitting a localized wireless coverage area-identifying signal (see col. 5, col. 23-30, inquiry signals);"

Applicant respectfully disagrees and notes that Olkkinen et al discusses an ad hoc network discovery scheme. According to Olkkinen et al (col. 5, lines 23-30) when a new device arrives within range of an ad hoc network, the new device transmits inquiry signals and if detected, these inquiry signals are answered by a member of the ad hoc network. In Applicant's view this is different than transmitting a signal that identifies a localized wireless coverage area for a neighborhood cell all as claimed.

The Examiner concedes that "... Olkkinen et al. is silent to disclosing if the establishing of communication between a source mobile subscriber unit and a destination unit is achieved through wide area network coverage when the source mobile subscriber unit is outside of the neighborhood cell, switching over to ad hoc wireless network coverage. In Applicant's view Olkkinen et al is additionally silent as to feature of switching from ad hoc to wide area network when leaving the neighborhood cell.

The Examiner then maintains that "See figure 2, Bahl et al. discloses a system of communicating in and around a localized wireless coverage area (see figure 2, Ad-hoc network

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280); ..." where the Examiner continues with various other specific assertions (see June 19, 2006 Office Action, page 3 – page 4 bullet points).

Bahl et al. shows and discusses throughout the specification an infrastructure (IS) or managed network mode and a peer to peer or ad hoc (AH) mode (see [0002], [0003], [0007] ...). The IS and AH network modes are the classic types of arrangements for a local area IEEE 802.11 based system as is evident to one of ordinary skill. The Examiner is correct with the assertion that Bahl et al discloses a system of communicating in a localized wireless coverage area and in fact in Applicant's respectfully considered view, that is all that Bahl et al is suited for doing since the Bahl et al system is based on IEEE 802.11 and the communicating unit (laptop 220) merely switches between IS (infrastructure based local area network communication via link 225 with access point 215) and AH (an adhoc based local area network communication via link 235 and handheld device 230) modes in a localized wireless coverage area.

The examiner (mistakenly in Applicant's respectfully considered view) claims that Bahl establishes a communication between a source mobile unit and destination unit through wide area network coverage and then switches that communication over to ad hoc network coverage. More specifically, the Examiner alleges "If the establishing of communication between a source mobile subscriber unit (see figure 2, laptop computer 220) and a destination unit (see figure 2, access point 215) is achieved through wide area network coverage when the source mobile subscriber unit is outside of the neighborhood cell, switching over to ad hoc wireless network coverage when the source mobile subscriber enter the neighborhood cell (see figure 2, WAN 255, IS mode) (see col. 4, [0030], to communicate with the wireless nodes in the AH mode, the dual-mode node switches over to the AH mode. When communicating with another IS wireless node

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or the wired portion of the IS network, the dual-mode node switched back to the IS mode) (see page 5, [0041] ...”

Applicant notes that the Examiner construes Bahl et al and the laptop 220 as the source wireless unit and access point 215 as the destination unit. The Examiner cites WAN 255 (Internet) and [0030] in support of the view that if communication is established via the WAN it is switched over to ad hoc network coverage when the source mobile unit enters the neighborhood cell. Applicant notes that WAN 255 is not used for communication between the laptop 220 (source) and access point 215 (destination) and furthermore, that whatever means is used for this communication there is no switching of that means. Applicant agrees that laptop 220 in Bahl et al is suited to switch between the IS and the AN mode as needed [0030], however this is not and does not suggest the claimed operation of “if the establishing of communication between a source mobile subscriber unit and a destination unit is achieved through wide area network coverage when the source mobile subscriber unit is outside of the neighborhood cell, switching over to ad hoc wireless network coverage when the source mobile subscriber unit enters the neighborhood cell to maintain the communication ...”

The Examiner’s allegations continue with “If the establishing of communication between a source mobile subscriber unit (see figure 2, laptop computer 220) and a destination unit (see figure 2, the access point 215) is achieved through the ad hoc wireless network (see figure 2, the ad-hoc network 280) coverage when the source mobile subscriber unit is within the neighborhood cell (see figure 2, the ad-hoc network 280), switching over to the wide area network coverage when the source mobile subscriber mobile unit exists [sic] the neighborhood cell (see page 4, [0030], to communicate with another IS wireless node or the wired portion of

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the IS network, the dual mode node switched back to the IS mode) (see page 1, [0006], when it later wants to function as a node of the infrastructure network, it then has to exit the ad hoc network and reconnect to the infrastructure network)."

Applicant respectfully disagrees with the Examiner's allegation noting that the link 225 between laptop 220 and access point 215 is always using an IS mode and this link or communication between the laptop 220 (source) and access point 215 (destination) never changes according to Bahl et al. Again, Applicant agrees that laptop 220 does change logical operation between an IS mode to communicate with access point 215 and an AH mode to communicate with handheld device 230. This however is not and does not suggest (Bahl et al taken alone or together with the other references) the claimed "if the establishing of communication between a source mobile subscriber unit and a destination unit is achieved through the ad hoc wireless network coverage when the source mobile subscriber unit is within the neighborhood cell, switching over to the wide area wireless network coverage when the source mobile subscriber mobile unit exits the neighborhood cell to maintain the communication ..."

Applicant does note that laptop 220 may include an embodiment of the computer 110 (fig. 1) and Bahl et al does suggest [0024] that the link 225 may be a 2.5G wide area network, however there is no teaching in Bahl et al about switching a communication established in a wide area network to a neighborhood cell or vice versa given the claimed circumstances.

The Examiner concedes that (in the Examiner's words) "the combined system (Olkkinen - Bahl) is silent to disclosing when the source mobile subscriber unit enters the neighborhood cell to maintain the communication between the source mobile subscriber unit and the destination

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unit; and when the source mobile subscriber unit exists the neighborhood cell to maintain the communication between the source mobile subscriber unit and the destination unit.”

The Examiner maintains that Gwon et al supplies the teachings that are missing from Olkkonen -Bahl and Applicant respectfully disagrees. As noted in a previous response, Gwon discusses a third generation mobile access IP data network [0029] and more specifically an IMT-2000 cellular system [0016], [0036]. As Gwon notes (CDMA, W-CDMA) [0040 - 0041] and as is well known, third generation cellular systems use a single air interface (e.g., air interface between BTS 150 and mobile nodes 135, 140) and data is formed into IP data packets, which are delivered to the IP network via the air interface, specifically cellular traffic channel data frames. Gwon does show or suggest a data packet routed from one unit (mobile node 135) to a destination unit (correspondent node 140). Gwon does discuss handing off a mobile node from one agent to another where these agents may be accessed via different cellular base transmitter sites (BTS) 150 (see FIG. 4 for example). Gwon specifically discusses a cellular handoff from one BTS to another BTS that requires IP data packets to be address reconfigured and routed into the data network using care of address procedures as defined by Mobile IP and IETF RFC 2261 (see FIG. 2, 3 and corresponding discussions [0044-0051]). Gwon discusses a scheme whereby handoffs within a cellular system can be predicted and thus any latency required for the handoff can allegedly be improved (see abstract for example).

Gwon does not show or suggest anything that remotely resembles an ad-hoc network or ah-hoc network coverage or any hand off from a wide area network or cellular network to any other network or any other ad-hoc network or vice-a-versa. The Examiner appears to consider a cellular BTS or BTS coverage area as an ad hoc network or ad hoc network coverage and

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somehow construes a handoff between different cellular BTS as the claimed wide area network to neighborhood cell (ad hoc) and neighborhood cell to wide area network communication switch over. This is clearly an improper construction of the reference and does not comport with the understanding of those of ordinary skill in the field.

Those of ordinary skill know that a BTS is part of a cellular system, e.g., the fixed transmitter that supports the cellular air interface with mobile units. Similarly those of ordinary skill know that ad hoc systems or coverage areas are those where links or connection are "opportunity" based rather than generally pervasive (thus ad hoc). Since the ad hoc systems are not generally available, these systems use different air interface standards and conventions. See the specification, for example, paragraph beginning at page 4, line 14 for further clarification. All that Gwon shows or suggests is a way of doing handoffs in a packet based cellular system that is akin to well known processes for handoffs within known cellular systems.

Thus and in view of the above discussions it is clear that these three references taken individually or in any combination do not show or suggest all features of claim 1 or any claims dependent on claim 1 (i.e., claims 2-8). Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 1-2 and 6 under 35 U.S.C. 103(a) as being unpatentable over Olkkonen et al. (U.S. Patent No. 6,842,46081) in view Bahl et al. (U.S. Patent No. 2003/005481881) and further in view of Gwon et al. (U.S. Patent No. 2003/0016655 A1).

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b) Claims 3-5, 7 and 8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Olkkonen-Bahl-Gwon) in view of Razavillar, et al., (US Pat. No.7,009,952 B1).

Claims 3-5, 7, and 8 are dependent on claim 1. As noted above, claim 1 appears to be allowable over the cited references. Thus at least by virtue of dependency, claims 3-5, 7, and 8 should also be allowable. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 3-5, 7, and 8 under 35 U.S.C. 103(a) as being unpatentable over Olkkonen et al. (U.S. Patent No. 6,842,46081) in view Bahl et al. (U.S. Patent No. 2003/005481881) and Gwon et al. (U.S. Patent No. 2003/0016655 A1) and further in view of Razavilar, et al., (US Pat. No.7,009,952 B1).

c) Claims 9-10 and 11-12 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Razavilar, et al., (US Pat. No.7,009,952 B1) in view of Bahl, et al. (U.S. Publication No. 2003/0054818 B1) and further in view of Gwon, et al. (U.S. Publication No. 2003/0016655 A1).

Claim 9 is independent in form with claims 10 and 11-12 dependent thereon. Claim 9 has been amended to further clarify the invention.

Razavilar, et al was patented on March 7, 2006 and filed on May 24, 2001. The corresponding specifics for Bahl et al and Gwon et al were noted above. The present invention was filed on December 11, 2001. Thus these references qualify as prior art, if at all, only if the reference qualifies as prior art under 102(e). Section 102(e) recognizes that (1) publications of

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applications by another under section 122(b) that are filed before the invention by applicant as well as (2) patents granted on an application for patent by another filed in the US before the invention by the applicant may preclude granting a patent to applicant. Applicant is investigating whether these respective references were filed prior to the invention by the Applicant and reserves the right to file an appropriate Declaration regarding conception and due diligence, if needed.

Claim 9 defines a method of establishing a packet data route via a wide area network, e.g., cellular network and responsive to excess frame errors via the wide area network, switching over to an ad-hoc network coverage when an appropriate cell is available and authorized (subscription in affect). E.g., when excess frame errors are detected and the unit is near a local coffee shop with ad-hoc coverage, the unit can switch over to the coffee shop ad-hoc system.

Claim 9 specifically recites:

“A method of communicating in and around a localized wireless coverage area, comprising:

establishing a data packet route to a destination unit through wide area network coverage;

determining whether a predetermined number of network frame errors have been received subsequent to the establishing of a wide area communication route to a destination unit through a wide area network coverage mode of operation; and

switching over to ad hoc wireless network coverage to maintain the data packet route to the destination unit upon determining that the data packet route is being disrupted and upon entry into a defined neighborhood cell, the switching over further conditioned on receiving a localized wireless coverage area identifying signal and determining whether service is available and authorized in the defined neighborhood cell.”

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The Examiner alleges that "Bahl discloses establishing a data packet to a destination unit through wide area network coverage (see figure 2, Internet WAN 255); the establishing of a wide area communication route to a destination unit through a wide area network coverage mode of operation (see page 1, [0007]); switching over to ad hoc wireless network coverage upon determining that the data packet route is being disrupted and upon entry into a defined neighborhood cell (see page 1, [0006], when it later want to function as a node of the infrastructure network, it then has to exist the ad hoc network and reconnected to the infrastructure network.)"

As noted in the discussions above nothing in Bahl et al shows or suggest switching from a wide area network to an ad hoc network.

The Examiner alleges that "Gwon et al., see figure 1, discloses the invention provides a way to reduce packet latency, packet loss and packet jitter that result when communications between a mobile node and one or more other fixed or mobile correspondent nodes is dynamically handed-off from one neighboring node to another due to a change in location of the mobile node within the network (see page 3, [0026], page 5, [0049], [0050], page 6, [0053], page 9, [0084]); ..." Applicant agrees that Bahl et al shows handing off from one mobile node to another in a wide area network.

The Examiner further asserts that Bahl et al shows:

"switching over to ad hoc wireless network coverage to maintain the communication between the source mobile subscriber unit and the destination unit; and when the source mobile subscriber unit exists the neighborhood cell to maintain the communication between the source mobile subscriber unit and the destination unit (see page 5, [0049], [0050], As mobile

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node (MN) 135 reaches intermediary location B and continues toward location C, in order to maintain communication with the network it must identify a new local router and establish a new network link to replace the link with local router R1) (see page 6, [0050], packets transmitted to the home IP address of mobile node 135 will be tunneled by the home area router to mobile node 135 at its new care of IP address)."

In view of the above discussion re claim 1, this assertion even if true does not show or suggest the claimed switching over to ad hoc wireless network coverage ... as claimed. All that Bahl et al shows is hand offs or re-routing of IP messages within a network, e.g., a wide area network from one BTS to another BTS.

Furthermore none of the references show or suggest conditioning the switching over ... as claimed, i.e., conditioned on receiving coverage area identifying signal and determining whether service is authorized on the defined cell.

Thus this combination of references does not show or suggest taken in any combination all features of claim 9 or at least by virtue of dependency, any of dependent claims 10-15. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 9-10 and 11-12 under 35 U.S.C. 103(a) as being unpatentable over Razavilar, et al., (US Pat. No.7,009,952 B1) in view of Bahl, et al. (U.S. Publication No. 2003/0054818 B1) in view of Gwon, et al. (U.S. Publication No. 2003/0016655 A1).

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d) Claims 13-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Razavillar-Bahl-Gwon) in view of Olkkonen, et al. (U.S. Patent No. 6,842,460 B1).

Claims 13-15 are dependent on claim 9 and claim 9 is believed to be allowable over these references. Thus at least by virtue of dependency, claims 13-15 should also be allowable. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 13-15 under 35 U.S.C. 103(a) as being unpatentable over Razavilar, et al., (US Pat. No.7,009,952 B1) in view of Bahl, et al. (U.S. Publication No. 2003/0054818 B1) in view of Gwon, et al. (U.S. Publication No. 2003/0016655 A1) and further in view of Olkkonen, et al. (U.S. Patent No. 6,842,460 B1).

e) Claims 16-20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Olkkonen, et al. (U.S. Patent No. 6,842,460 B1) in view of Bahl (U.S. Publication No. 2003/0054818 B1).

Claim 16 is independent and claims 17-20 are dependent on claim 16. Claim 16 has been amended to correct some informalities and defines a wireless neighborhood communications system and specifically recites as part of that system:

“a last hop node for defining a neighborhood cell;
a source mobile subscriber unit including a first source transceiver for communicating through wide area wireless network coverage outside of the neighborhood cell, and a second source transceiver for communicating through ad hoc wireless network coverage within the neighborhood cell;

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a destination unit including a first destination transceiver for communicating through the wide area conventional wireless network coverage outside of the neighborhood cell, and a second destination transceiver for communicating through the ad hoc wireless network coverage within the neighborhood cell;

the last hop node further for causing the source mobile subscriber unit to communicate with the destination unit through the wide area conventional wireless network coverage when the source mobile subscriber unit is outside of the neighborhood cell, and for causing the source mobile subscriber unit to communicate with the destination unit through the ad hoc wireless network coverage when the source mobile subscriber unit is within the neighborhood cell.”

With reference to claim 16, the Examiner maintains that “Olkonen discloses a last hop node (see figure 1, wireless device (information provider) 106, 118) for defining a neighborhood cell (see col. 13, lines 45-51); the last hop node (see figure 1, wireless device (information provider) 106, 118) further for causing the source mobile subscriber unit (see figure 1, wireless device 100) to communicate with the destination unit (see figure 1, wireless device 108, 118) through the conventional wireless network coverage when the source mobile subscriber unit is outside of the neighborhood cell, and for causing the source mobile subscriber unit to communicate with the destination unit through ad hoc wireless network coverage when the source mobile subscriber unit is within the neighborhood cell (see col. 12, lines 50-67, col. 13, lines 45-50).”

Applicant respectfully disagrees noting that Olkonen merely shows a new Bluetooth device sending an inquiry and getting a response from another Bluetooth device with all messages sent via an ad hoc wireless network. The response either comes from a Bluetooth device with network information or another device and if from the other device, the address of the information providing device is provided. If the address is provided the Bluetooth device can

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be contacted and the information obtained according to the passages in col. 12 and col. 13 that have been cited by the Examiner. Nothing is said about communicating with a destination unit via wide area coverage or via ad hoc coverage depending on whether the source unit is within the ad hoc coverage area all as claimed.

The Examiner concedes that "Olkkonen is silent to disclosing a source mobile subscriber unit including a first source transceiver for communicating through wide area wireless network coverage outside of the neighborhood cell, and a second source transceiver for communicating through ad hoc wireless network coverage within the neighborhood cell." The Examiner then relies on Bahl and alleges that laptop computer 220 includes the claimed first source transceiver for wide area communication and the second source transceiver for ad hoc communication. As noted above, the laptop includes logical features that allow IS and AH operation all on an IEEE 802.11 system. There is only one transceiver and that transceiver is only capable of local area network operation. The Examiner further maintains that the access point 215 of Bahl shows or suggests a destination unit including a first destination transceiver (see figure 2, 215, IS mode) for communicating through the conventional wireless network coverage outside of the neighborhood cell, and a second destination transceiver (see figure 2, 215, AH mode) for communicating through the ad hoc wireless network coverage within the neighborhood cell (see page 6, [0052]). This is simply erroneous, as the wireless transceiver implicitly within the access point always transmits/receives via the IS mode and always according to one protocol and always one local area network.

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Thus the references cited by the Examiner taken in any combination fail to show the claimed last hop node and functionality of such a node and the claimed source and destination units as recited by claim 16 and claims dependent on claim 16. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 16-20 under 35 U.S.C. 103(a) as being unpatentable over Olkkonen et al. (U.S. Patent No. 6,842,546 B1) in view of Bahl (U.S. Publication No. 2003/0054818).

f) Claim 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Olkkonen-Bahl) in view of Razavillar et al. (U.S. Patent No. 7,009,952 B1).

Claim 21 is dependent on claim 16 and claim 16 is believed to be allowable over these references and thus claim 21 at least by virtue of dependency should likewise be allowable. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claim 21 under 35 U.S.C. 103(a) as being unpatentable over the combined system (Olkkonen-Bahl) in view of Razavillar et al. (U.S. Patent No. 7,009,952 B1).

Accordingly, Applicant respectfully submits that the claims, as amended, clearly and patentably distinguish over the cited references of record and as such are to be deemed allowable. Such allowance is hereby earnestly and respectfully solicited at an early date. If the Examiner has any suggestions or comments or questions, calls are welcomed at the phone number below.

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Although it is not anticipated that any fees are due or payable since this response is being timely filed within the allotted three (3) time period and no other fees appear to be due or payable, the Commissioner is hereby authorized to charge any fees that may be required to Deposit Account No. 50-3435. This response if being filed in a representative capacity by Charles W. Bethards, Registration number 36,453, in accordance with the provisions of 37 CFR 1.34.

Respectfully submitted,

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